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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,033	12/14/2001	Hichem M'Saad	A6139/T43800	7470
32588	7590	05/03/2004	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			HOFFMANN, JOHN M	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/017,033	Applicant(s) M'SAAD, HICHEM	
	Examiner John Hoffmann	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 21, 22 and 25-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I in Paper dated 4/19/04 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 21-22 and 25-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper of 4/19/04.

Information Disclosure Statement

The information disclosure statement filed 12/14/01 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

The disclosure is objected to because of the following informalities: The first paragraph of page 1 of the specification has some blanks that need to be filled in.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-17, and 23-24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15: The claim uses the term "mtorr". It is unclear if this is suppose to be "torr" or "millitorr" or something else.

Claim 16 refers to a ratio. A ratio has two numbers. Examiner could not find any two numbers which corresponds to a ratio. Is the ration suppose to be 1:8 rather than 1.8?

Claim 17: lines 6-7 refer to "the etched undercladding layer." There is no antecedent basis for this. It is unclear whether it requires the undercladding layer be etched, or if it is a typo. There is no antecedent basis for "the uppercladding layer in gaps"

Claim 23: line8 : "uppecladding" is misspelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9-12, 18 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Bazylenko 6154582.

The invention is taught at the paragraph spanning cols. 6-7, figure 1A and col. 2, line 56.

Claim 2: see col. 2, lines 32-36. The production of mixture: see the sentence bridging cols. 5-6.

Claim 3: col. 6, lines 22-25.

Claim 18: see col. 6, line 19 of Bazylenko.

Claim 23: see col. 3, lines 15-22.

Claim 24 is clearly met.

Claims 9-12 are met in that they meet the 0 sccm limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 – 7, 13-15 and 20 asdfasdf are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582.

See how Bazylenko is relevant (above). Bazylenko does not disclose the claimed flow rates. It would have been obvious to have whatever flow rates in as desired – depending upon the scale of the operation/chamber. Clearly a small substrate would require a lower flow rate than a large substrate. Furthermore, it would have been obvious to perform routine experimentation to determine the optimal flow rates.

Claim 5: see col. 7, line 4.

Claim 6: Bazylenko does not disclose using any inert gas. It would have been obvious not to use any inert gas, because none is disclosed as being needed, and such would just add to cost/effort. This would read on the “0” value.

Claim 7: see col. 2, lines 34-35, and col. 6, lines 63-67: any amount would be obvious based on the scale of the operation, and the degree of doping desired.

Claim 13: based on col. 5, line 49 and col. 6, line 12, the power density appears to be only 4 W/cm². It would have been obvious to perform routine experimentation to determine the optimal power, with no new or unexpected results. Furthermore, even if one was felt that they were limited to the disclosed power for the figure 1a of Bazylenko embodiment, such gives no indication as to what the power would be for the ECR (col.

6, line 19) alternative embodiment. It would have been obvious to perform routine experimentation to determine the optimal power for the ECR embodiment.

Claim 14: there is a bias applied: col. 6, lines 13-14. It would have been obvious to perform routine experimentation to determine the optimal bias power.

Claim 15: Bazylenko uses a pressure of 15 millitorr. It would have been obvious to perform routine experimentation to determine the optimal pressure in the ECR apparatus.

Claim 20: col. 6, lines 64-65 discloses an index of 1.45 which is between 1.46 and 1.4473. 1.46 is "about 1.4443". There is no indication that the 1.45 value is at 1550 nm. If the claim limitations aren't inherently met, it would have been obvious to have what ever index one desires, depending upon the particular optical device/characteristics one desires.

It is noted that at least part of the rejection is based motivation that is not found in the present references. Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). For example, making things portable, integral, separable, adjustable, or automatic are a few obvious modifications that come from knowledge generally available to one of ordinary skill as

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set forth in well-established case law. The rejection clearly states the complete rationale for the holding that the invention was an obvious one.

Furthermore, if the Office had taken the position that the reference did provide the motivation, the rejection would have been under 35 USC 102 anticipation.

Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582 as applied to claim 7 above, and further in view of Ngai 6451686.

In the HDP deposition art, SiF₄ and CF₄ are known equivalents for fluorine sources for : col 13, lines 46-54 and col. 12, lines 33-37. IT would have been obvious to substitute equivalents in the Bazylenko method, depending upon which gases are most available.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582 as applied to claim 2 above, and further in view of Imoto 4856859 (and optionally in view of Zhong 6705124).

Bazylenko dose not disclose using phosphorous gas as claimed. Imoto discloses that one can dope cladding using the claimed gas: col. 4, lines 61-66 and col. 2, lines 20-28. It would have been obvious to include the claim gas depending upon what specific glass is desired and what particular properties one desires for the final product. The particular flow rates would have been obvious depending upon the desired degree of doping, and the size of the substrate to be made.

For claim 11 – it would be obvious to include boron as claimed – if one desires the known properties that boron produces in the final product.

Zhong is cited as being an “optional” because it is not necessary to demonstrate the invention is obvious (in the event that Applicant swears behind the Zhong filing date.) However Zhong does show that it is known to use HPD to make conformal layers with glass that includes boron and phosphorous.

Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582 and Imoto 4856859 (and optionally in view of Zhong 6705124) as applied to claim 11 above, and further in view of Schneider 4557561.

The first two references do not teach using the boron trifluoride. Col. 3, lines 29-40 discloses using the boron trifluoride when making a glass: to 1) add fluoride, and 2) to add the boron as a dopant. It would have been obvious to use boron Trifluoride in the Bazylenko process so as to supply another dopant Boron, and to help incorporate fluorine into the glass – depending upon the desired optical/chemical properties the artisan wishes to have in the final product.

Zhong is cited as being an “optional” because it is not necessary to demonstrate the invention is obvious (in the event that Applicant swears behind the Zhong filing date.) However Zhong does show that it is known to use HPD to make conformal layers with glass that includes boron and phosphorous.

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582 as applied to claims 1-2 above and further in view of Rossman 6194038.

Bazylenko discloses different operating parameters than is being claimed. However, Rossman recognizes that the same claimed operating parameters "greatly increases the deposition rate" (col. 2, lines 29-34) – among other advantages. See col. 3, lines 8-37 of Rossman which discloses the various parameters. Col. 2 lines 9-21 discloses that the process is of the same nature as applicants' and Bazylenko's. It would have been obvious to change the Bazlenko parameters/gases to be in line with the Rossman parameters/gases for any or all of the Rossman advantages.

Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko 6154582 as applied to claims 1-2 above and further in view of Rossman 6194038 and/or Narita 6122934 (and optionally in view of Zhong 6705124).

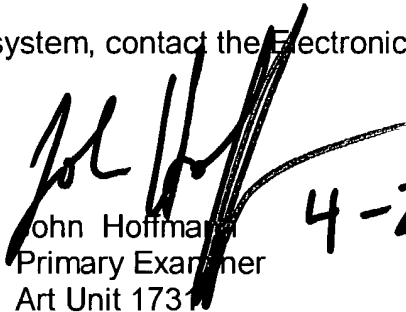
See how Rossman is treated above. Narita discloses the same problem that Applicant and Rossman notes: a gap between two close structures. Bazylenko does not disclose this problem. It would have been obvious to have as many cores/waveguides on the substrate as possible, so as to have a high a circuit density as possible. It would have been obvious to use the Rossman method of etching between gaps so as to create conformal layers, and for the high deposition rate. It would have been further obvious to add an additional layer so as to protect the optical device as disclosed in the Narita Abstract.

Zhong is cited as being an "optional" because it is not necessary to demonstrate the invention is obvious (in the event that Applicant swears behind the Zhong filing date.) However Zhong does show that it is known to use HPD to make conformal layers with glass that includes boron and phosphorous.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Hoffmann
Primary Examiner
Art Unit 1731

4-28-04

jmh